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ABSTRACT

The results of a survey of students majoring in health care fields regarding a proposed program in which educational loans would be forgiven in exchange for serving medically underserved Pennsylvanians are discussed in this report. The survey sought to discover whether students would be interested in participating in a "loan forgiveness" program and how much of their loan they would want repaid for participation. A stratified sample of 7,638 students who received Stafford or Health Education Assistance loans in academic year 1990-91 was surveyed; of this number a total of 2,965 usable surveys were returned for a response rate of 38.8 percent. Results indicated that 74 percent of the sample would be willing to serve for at least 1 year in return for loan forgiveness. African American respondents were significantly more likely than others (91 percent versus 72 percent), to be willing to serve. Respondents' willingness to serve was related to the types of medical facilities where they most wanted to work, types of patients they most wanted to help, and their current and expected total student loan indebtedness. Respondents who currently owed or expected to owe $10,000 to $14,000 were more likely to be willing to serve than those who owed $35,000 or more. In addition, respondents who expected relatively low initial salaries wanted a greater proportion of their loans forgiven. Appendixes contain the survey and cover letter, and 14 tables of data. (JB)

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WHAT PENNSYLVANIA HEALTH CARE STUDENTS WOULD WANT FOR PARTICIPATING IN LOAN FORGIVENESS PROGRAMS

by

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Research Associate

September, 1991

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EXECUTIVE SUMMARY

This report discusses the results of a survey of students majoring or intending to major in health care fields, asking if they would be willing to serve medically underserved Pennsylvanians (such as the elderly, low-income without health insurance, and Medicaid recipients) in exchange for repayment of all or a portion of their student loans. The purpose of the survey was to discover what students might be interested in participating in a "loan forgiveness program," and how much of their loans they would want to be repaid for participation. The 7,638 students surveyed were from a population of 23,769 health care students who received Stafford or HEAL loans through PHEAA in academic year 1990-91. The sample was stratified by academic grade level, type of institution and types of loans received so that the respondents would reasonably represent the population. There were 2,965 usable surveys returned to PHEAA, representing a response rate of 38.8 percent.

About 74.1 percent of respondents said they would be willing to serve for at least one year in loan forgiveness. Only 2.3 percent said they would not serve, and 23.6 percent were not sure. There were no statistically significant differences (at the 0.05 level of significance) in the gender, types of institutions, or academic grade levels of students willing to serve. However, Black respondents were significantly more likely than others, 91.4 percent versus 72.9 percent, to be willing to serve.

Respondents' willingness to serve was related to the types of medical facilities where they most wanted to work, types of patients they most wanted to help, and their current and expected total student loan indebtedness. Respondents who most wanted to work in state hospitals, county hospitals and public health agencies were statistically significantly more likely to be willing to serve than those who most wanted to work in private hospitals and private practice. Those who most wanted to serve low-income and elderly patients were more likely to serve than those who most wanted to serve other publicly or privately insured patients. Respondents who currently owed or expected to owe $10,000 to $14,999 were more likely to serve than those who owed $35,000 or more.

The types of incentives borrowers desired were related to the types of medical fields they planned to enter, and to their racial/ethnic group membership. While 58.2 percent of those entering nursing and 53.5 percent of those entering physical therapy said they wanted only their Stafford Loans forgiven, 84.9 percent of those entering physicians/general practice and 81 percent of podiatrists wanted other loans (such as SLS, HEAL and Health Professions Loans) to be repaid. In general, those entering fields requiring medical doctors' degrees wanted their other types of loans repaid, while those entering fields not requiring these degrees wanted only their Stafford Loans forgiven. Nearly 72 percent of Asians and Hispanics wanted their other loans repaid, compared to only 48 percent of students from other racial/ethnic groups.

Most borrowers were willing to work in a wide variety of medical facilities, and to help a variety of patients or clients. About 79 percent of respondents said they would work in more than one type of medical facility,

and 13.1 percent had no preference. Nearly 53 percent of respondents would serve more than one type of patient, and 34 percent said they had no preference for the types of patients or clients they would serve.

Respondents who expected relatively low initial salaries wanted a greater proportion of their loans forgiven. Those who expected to earn under $15,000 wanted, on average, at least $4,465 (46.1 percent of their total expected loan indebtedness) of loan forgiveness for one year of service. Conversely, those who expected to earn $50,000 or more wanted $9,675 (25.1 percent) forgiven. The relationship between minimum amounts of forgiveness and expected initial salaries also held for borrowers willing to serve more than one year.

The survey results show that a majority of respondents were willing to serve in loan forgiveness. However, since these respondents represented only 28.8 percent of the sample, and since over 60 percent of the surveys were not returned, it is possible that a majority of the sample, and the population, would not be interested in serving. Borrowers who were willing to serve were probably more likely to respond to the survey.

It also appears that the costs of implementing a loan forgiveness program that would meet students' desires would be very high. On average, respondents said they wanted about $7,500 of loans forgiven for one year of service. Forgiving this amount of loans for the 2,167 students who were willing to serve would cost approximately $16.3 million. If 28.8 percent of the population (6,120 students) were to participate in a loan forgiveness program, the cost, based on survey responses, would be approximately $51.3 million for one year of service.

Introduction: The Pennsylvania General Assembly recently has considered several bills to allow college graduates majoring in health care fields to have all or a portion of their Stafford Loans to be repaid by the Commonwealth if they agreed to provide health care services to medically underserved Pennsylvanians. These proposals, known as "loan forgiveness" programs, are designed to provide financial incentives for future health care professionals to serve clients or patients who may not have adequate access to health care, such as rural residents, the medically uninsured, the elderly or Medicaid recipients.

To evaluate the potential effects of such loan forgiveness proposals, the Pennsylvania Higher Education Assistance Agency (PHEAA) surveyed 7,638 postsecondary students majoring or intending to major in health care fields, asking if they would be willing to serve in exchange for loan forgiveness. The survey sample was randomly selected from a population of 23,769 health care students who received Stafford Loans or HEAL Loans through PHEAA in academic year 1990-91. The sample was stratified by grade, type of institution and type of loan received through PHEAA (either Stafford or HEAL, or both Stafford and HEAL) to ensure that the proportions of respondents would accurately reflect the population. However, the survey was not sent to freshmen attending public or private four-year colleges, since many of these students are likely to change majors during their college careers, would be less likely to participate in a health service activity, and therefore would provide responses that were not especially useful in assessing future interest in loan forgiveness programs.

The survey's major purpose was to find out what proportion of health professions students would be willing to participate in a loan forgiveness program, and to determine the minimum amounts and proportions of student loans the Commonwealth might have to forgive to encourage borrowers to participate for one or more years. The survey also sought to discover what additional incentives, if any, might be necessary to encourage student participation; and to provide demographic and other data on students in the health care fields that currently are not collected by PHEAA--their exact majors and career fields, racial/ethnic backgrounds, gender, enrollment and marital statuses, and their present and estimated future indebtedness from all types of student loans. (Copies of the survey instrument and cover letter are displayed in Appendix A of this report).

The first section of this report describes the characteristics of the student borrowers who responded to the survey. Later sections analyze the characteristics of borrowers who said they would be willing to participate in a loan forgiveness program and describe the types of incentives borrowers said they would need in order to participate. To make the report easier to read, many tables are presented in the appendices. Appendix A describes the salient characteristics of students majoring in health care fields. Appendix B contains tables that supplement the information reported in the text of the report.

Characteristics of Borrowers in the Health Care Field

Information on the characteristics of borrowers in the health care field is based on 2,965 usable loan forgiveness surveys returned to PHEAA. It is

reasonable to conclude that the characteristics of respondents are reasonably representative of all borrowers in the population (see Tables A-1 and A-2). However, it should be noted that borrowers who were more willing to participate in a loan forgiveness program were probably more likely to respond to the survey than those who were not interested in serving. While the characteristics of respondents reasonably represent those of the borrower population, a greater percentage of respondents than of the population were probably interested in participating in a loan forgiveness program. It is very unlikely that a greater percentage of the population than of the respondent group would be interested in loan forgiveness.

Survey data collected on respondents' demographic characteristics show that about 65 percent were female. About 88 percent of respondents were White, 6.5 percent were Black, 1.6 percent were Hispanic and 1.2 percent were from other racial/ethnic groups. Most respondents were also never married, and attended their postsecondary institutions full-time (see Table A-3).

Over 24 percent of respondents intended to enter the nursing field. This was followed by physicians entering the general practice field (8.9 percent), dentists and dental assistants (7.8 percent), and doctors entering podiatry (5.5 percent). Females tended to major in fields such as nursing, obstetrics/gynecology, pediatrics and physical therapy. Males tended to major in such fields as physician/general practice, chiropractors and podiatrists (see Table A-4).

For their first year of full-time employment as health care professionals, a plurality of borrowers, 24.6 percent, expected to receive starting salaries between $25,000 and $29,999. About 17 percent expected to receive initial salaries of $50,000 or more. The approximate mean starting salary for survey respondents was $34,171, and the median salary was $29,745 (see Table A-5).

A plurality of borrowers (31.3 percent) said they had Stafford Loans only. Over 7 percent had both Stafford and Perkins Loans, and 6 percent had Stafford, SLS and HEAL loans. More than 14 percent did not have Stafford Loans, but had some other type of loan (see Appendix Table A-6).

Borrowers Who Would Participate in a Loan Forgiveness Program

Almost 74.1 percent of the survey respondents said they would be willing to participate in a loan forgiveness program, only 2.3 percent said they would not, and 23.6 percent said they were not sure (see Table B-1). Over 73 percent of male respondents said they would participate, and 74.5 percent of women were willing to serve. There were no statistically significant differences (at the 0.05 level of significance) in the gender, grade level, marital status, enrollment status, or types of institutions attended of borrowers who said they would participate in a forgiveness program.

Statistically significantly more Black borrowers than other borrowers said they would participate in a program (91.4 percent versus 72.9 percent). There were no statistically significant differences among the proportions of borrowers of other racial/ethnic groups who said they were or were not willing to serve in a loan forgiveness program (see Table B-2).

There were no statistically significant differences in borrowers' willingness to serve by their intended medical fields (see Table B-3). But there were significant differences between borrowers who were willing to participate in a loan forgiveness program by the types of medical facilities they most wanted to work in, and by the types of patients they most wanted to serve. Table 1 shows that respondents who most preferred to work in private hospitals and private practice (63 percent and 68.5 percent, respectively) were less likely than respondents who said they most preferred to work in state hospitals, county hospitals and public health agencies (83.3 percent, 83.6 percent and 90.5 percent, respectively), to have been willing to participate in a loan forgiveness program. Thus, borrowers who most preferred to work in private hospitals or private practice were relatively less likely to participate in a loan forgiveness program than borrowers who most wanted to serve in other types of medical facilities. Similarly, borrowers who most preferred to serve other publicly or privately insured patients were less likely to be willing to serve in a loan forgiveness program than borrowers who most wanted to serve other types of patients or clients.

Borrowers' current and expected total student loan debt may also significantly affect their decision to participate in a forgiveness program. As Table 2 indicates, statistically significant differences between the proportions of respondents willing to participate occur for those who currently owe or expect to owe $10,000 to $14,999, $25,000 to $29,999, and $35,000 or more. The proportion of borrowers who were willing to participate was highest for borrowers owing $10,000 to $14,999 (80.4 percent), and was lowest for those owing $35,000 or more (69.2 percent). This suggests that borrowers who owe large amounts of student loans were relatively less likely to participate in a loan forgiveness program than other borrowers. Perhaps these borrowers expect to enter medical fields that will provide them with enough income to repay their student loans without forgiveness, and therefore, they may not be as attracted to the loan repayment incentives of a forgiveness program as borrowers who expect to owe between $10,000 and $14,999. Borrowers who expected higher total loan debts generally expected to earn higher salaries.

Borrowers' Preferred Loan Forgiveness Program

It is important to analyze the types of loan forgiveness programs in which borrowers would prefer to serve. To evaluate borrowers' preferences, the survey asked several questions: the types of incentives borrowers would need to encourage them to serve; the types of patients or clients they would be willing to serve; types of medical facilities where they would want to work; areas of Pennsylvania where they would be willing to serve; and the minimum loan amounts that would have to be forgiven to encourage borrowers to participate in loan forgiveness.

The types of incentives borrowers wanted for serving in a loan forgiveness program varied widely by the medical field they intended to enter, types of loans borrowers now have or plan to have in the future, and by borrowers' racial/ethnic groups. Table 3, a cross tabulation of the types of incentives borrowers needed for entering loan forgiveness programs by their intended medical fields, shows that statistically significantly greater percentages of borrowers planning to enter fields requiring medical doctors degrees wanted to have their other types of student loans forgiven, such as HEAL loans, SLS loans and Health Professions Loans. Borrowers planning to enter fields that

Table One
Percentages of Respondents Willing to Participate
In a Loan Forgiveness Program, By Most Preferred
Health Care Facility As a Place of Employment
and By Most Preferred Types of Patients/Clients

Preferred Facility	Percent	Total Number In Category
State Hospital	83.3%*	300
County Hospital	83.6*	116
Community Hospital	77.4	619
Public Health Agency	90.5*	137
Nursing Homes	80.0	80
Private Hospitals	63.0*	512
Private Practice	68.5*	530
Home Health Agencies	83.0	59
Other Facilities	72.1	111
No Preference/Unknown	72.2	115
Preferred Patients		
Low Income With No Health Insurance	86.3%*	561
Elderly	81.3*	433
Medicare or Medicaid Recipients	76.1	197
Other Insured Patients	65.4*	710
Other Patients	76.7	163
No Preference/Unknown	70.3*	511

* Indicates percentage is statistically significantly different from others, at the 0.05 level of significance.

Table Two
Percentages of Respondents Willing to Participate
In a Loan Forgiveness Program, By Current and Expected
Total Loan Indebtedness

Current Debt	Percent	Total Number In Category
Under $5,000	76.9%	584
$5,000-$7,499	76.0	437
$7,500-$9,999	76.0	254
$10,000-$14,999	80.4*	286
$15,000-$19,999	77.9	190
$20,000-$24,999	73.3	120
$25,000-$29,999	64.1*	106
$30,000-$34,999	72.7	110
$35,000 or More	69.2*	796

Expected Debt	Percent	Total Number In Category
Under $5,000	74.0%	227
$5,000-$7,499	78.6	281
$7,500-$9,999	69.4	209
$10,000-$14,999	81.6*	380
$15,000-$19,999	77.6	290
$20,000-$24,999	79.3	169
$25,000-$29,999	84.0*	81
$30,000-$34,999	69.5	59
$35,000 or More	69.8*	1,185

* Indicates percentage is statistically significantly different from others, at the 0.05 level of significance.

Table Three
Types of Incentives Wanted for Respondents to Work
in Loan Forgiveness Program, By Intended Medical Fields

Types of Incentives	Medical Fields: Nursing	Dental Care	Physical Therapy	Physicians Assistant	M.D. Gen Prac
Repay Stafford Loans	58.2%*	25.5%	53.5%*	38.7%	10.2%
Repay Other Loans	27.0	67.2*	29.5	41.9	84.9*
Health Education Grants	8.0	4.4	14.7	12.9	1.3
Other	6.8	2.9	2.3	6.5	3.6
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Number	586	204	129	31	304

	OB/GYN	Pediatrics	Optometry/ Ophthalmology	Psychology
Repay Stafford Loans	23.7%	28.3%	41.3%	31.6%
Repay Other Loans	65.8	55.1	54.3	50.9
Health Education Grants	7.9	8.7	2.8	12.3
Other	2.6	7.9	2.8	5.3
Total	100.0%	100.0%	100.0%	100.0%
Number	76	127	46	57

	Medical Lab Technician	Podiatrics	Occupational Therapy	Pharmacy
Repay Stafford Loans	72.7%*	12.2%	52.9%	49.0%
Repay Other Loans	9.1	81.0*	25.7	39.8
Health Education Grants	11.4	2.7	14.3	5.1
Other	6.8	4.1	7.1	6.1
Total	100.0%	100.0%	100.0%	100.0%
Number	44	147	70	98

	MD/Other Fields and Unknown	Non-MD/Other Fields and Unknown	All Respondents
Repay Stafford Loans	13.1%	70.0%*	39.1%
Repay Other Loans	80.0*	25.8	49.4
Health Education Grants	1.5	9.6	6.7
Other	5.4	2.6	4.8
Total	100.0%	100.0%	100.0%
Number	260	384	2,563

* Indicates percentage is statistically different from the others, at the 0.05 level of significance.

do not require medical doctors degrees tended to want only their Stafford Loans repaid. For example, while 84.9 percent of borrowers planning on becoming physicians in general practice and 65.8 percent of those planning on obstetrics/gynecology wanted to have their other loans repaid, 58.2 percent of those planning on nursing and 53.5 percent of those planning to become physical therapists wanted only their Stafford Loans forgiven. This difference occurs because those entering fields requiring medical degrees tended to have many different types of student loans and larger current and expected future student loan indebtedness than those not requiring these degrees (see Table B-4). Relatively few borrowers wanted to receive grants for future medical education or other possible benefits. These borrowers were most likely to be majors in fields not requiring a medical doctors' degree (especially in physical therapy, physician assistant, psychology, medical laboratory technician and occupational therapy).

Table 4 shows that the types of incentive borrowers said they would need to participate in loan forgiveness were related to the types of loans they had or planned to have in the future. Over 74 percent of borrowers who had or planned to have only Stafford Loans wanted only these loans repaid, while 66.8 percent of borrowers who had both Stafford Loans and other types of loans wanted these other loans repaid, and 58 percent of borrowers who had other types of loans only (no Stafford Loans) wanted only these other loans repaid. Overall, 39.5 percent of borrowers said they wanted their Stafford Loans repaid, while 49.3 percent wanted other loans repaid.

Types of incentives wanted for participating varied slightly by respondents' racial-ethnic groups. Table 5 shows that greater proportions of Hispanic and Asian respondents than students from other racial-ethnic groups wanted other types of loans repaid. Nearly 72 percent of Hispanic and Asian borrowers wanted their other loans repaid, compared to only 48 percent of other students. This likely occurs because Hispanic and Asian students tended to have more types of student loans. Over 84 percent of Hispanic students, and 87 percent of Asians, had both Stafford and other types of loans, compared to 64 percent of Whites and 71.9 percent of Blacks (see Table B-5).

Although borrowers showed a preference for the types of incentives they would require to participate in a forgiveness program, most did not show a strong preference for the types of medical facilities where they would be willing to serve, the types of clients they would help, or the areas of the Commonwealth where they would be willing to work. Table 6 shows that a majority of borrowers were willing to serve more than one type of patient or client, and would work in more than one type of medical facility. Over 34 percent of respondents had no preference for the type of patients they would serve in a forgiveness program, and 53 percent said they would be willing to work with more than one type of patient. Only 12.4 percent said they would serve only one type of patient or client. Similarly, Table 7 shows that over 79 percent said they would be willing to work in more than one type of medical facility, and 13.1 percent showed no preference for the type of facility in which they would be willing to work. Only 7 percent said they would be willing to work in only one type of medical facility.

Tables 8 and 9 further show borrowers' willingness to serve in many types of medical facilities and to work for several types of patients or clients. Table 8 shows that, while 82.3 percent of respondents who said they were willing to work in state hospitals most wanted to work in these hospitals,

Table Four
Types of Incentives Needed for Loan Forgiveness,
By Survey Respondents' Types of Loans Borrowed

Types Of Incentives	Types of Loans: Stafford Only	Stafford and Other Loans	Other Loans Only	All Respondents
Repay Stafford Only	74.2%	24.3%	23.2%	39.5%
Repay Other Loans	10.2	66.8	58.0	49.3
Provide Health Education Grants	10.9	4.3	11.6	6.5
Other Incentives	4.7	4.5	7.2	4.7
Total	100.0%	100.0%	100.0%	100.0%
Number	805	1,760	69	2,634

Table Five
Types of Health Care Incentives Needed By
Respondents to Be Willing to Serve, By
Racial/Ethnic Group Membership

	White	Black	Hispanic	Asian	Others	Total
Repay Only Stafford	41.0%	35.5%	11.6%	21.4%	38.9%	39.6%
Repay Other Loans	47.8	50.0	72.1	71.4	55.5	49.1
Health Ed Grants	6.6	11.0	4.7	2.4	0.0	6.7
Other Options	4.6	3.5	11.6	4.8	5.6	4.6
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Number	2,312	172	43	84	18	2,629

Table Six
Types of Clients Respondents Were
Willing to Serve Under A Loan
Forgiveness Program

Clients	Number	Pct	Percent Only This Type
Low-Income Without Insurance	1,474	50.8%	5.6%
Elderly	1,379	47.6	2.2
Medicare or Medicaid Patients	1,421	49.0	2.0
Other Patients	262	9.0	2.6
No Client Preference	1,002	34.6	34.6

Table Seven
Types of Medical Facilities Where
Respondents Were Willing to Serve Under A Loan
Forgiveness Program

Places	Number	Pct	Percent Only This Facility
State Hospital	1,677	57.7%	0.9%
County Hospital	1,568	54.0	0.4
Community Hospital	1,933	66.6	1.5
Public Health Agency	1,173	40.4	0.5
Nursing Home	812	28.0	0.4
Private Hospital	1,840	63.4	0.8
Private Practice	1,598	55.0	1.3
Home health Agencies	833	28.7	0.2
Other Facilities	146	5.0	1.0
No Facility Preference	381	13.1	13.1

Table Eight
Places Respondents Were Willing to Serve For
Loan Forgiveness, By Places They Would Most Like to Serve

Willing to Serve	Most Like to Serve: State Hospital	County Hospital	Community Hospital	Public Health	Nursing Homes
State Hospital	82.3%	61.5%	62.9%	43.5%	30.3%
County Hospital	60.0	86.1	69.6	50.4	32.2
Community Hospital	54.3	54.4	82.8	40.9	27.2
Public Health Agencies	61.2	50.4	58.3	81.3	29.5
Nursing Homes	54.4	51.9	51.9	44.3	82.3
Private Hospitals	53.7	49.5	65.4	28.5	17.4
Private Practice	54.5	51.7	62.3	36.2	29.6
Home Health	42.4	30.5	47.5	39.0	30.5
Other Place	48.1	41.5	61.3	37.7	18.9
No Preference	51.3	51.3	54.9	39.8	24.8

	Private Hospital	Private Practice	Home Health	Other Places	No Preference
State Hospital	59.2%	43.1%	33.1%	5.8%	16.7%
County Hospital	56.5	44.4	33.0	0.8	10.4
Community Hospital	62.0	45.6	32.5	2.7	15.1
Public Health Agencies	40.3	45.3	30.9	6.5	18.7
Nursing Homes	50.6	43.0	34.2	2.5	16.5
Private Hospitals	85.5	54.3	22.4	3.2	11.5
Private Practice	65.3	86.0	22.7	2.3	13.5
Home Health	28.8	33.9	78.0	10.2	18.6
Other Place	51.9	46.2	19.8	41.5	11.3
No Preference	55.7	47.8	30.1	6.2	40.7

Table Nine
Types of Patients/Clients Respondents Were Willing to Serve
By Types They Would Most Like to Serve

	Most Like to Serve					
Willing to Serve	Low Income	Elderly	Medicare/ Medicaid	Other Insured	Other Patients	No Preference
Low-Income	76.5%	50.0%	57.4%	47.9%	45.3%	33.4%
Elderly	48.5	75.1	58.9	44.3	36.7	30.3
Medicare/Medicaid	54.0	58.4	75.6	51.4	34.8	30.0
Other Patients	4.6	6.1	5.1	6.9	59.6	5.6
No Preference	24.7	26.5	22.8	37.3	25.5	66.6

Table Ten
Places Respondents Would Most
Like to Work, By Racial/Ethnic Groups

	White	Black	Hispanic	Asian	Other	Total
Urban PA	60.0%	76.1%*	63.4%	54.4%	43.8%	60.8%
Rural PA	26.6	11.0*	12.2	12.7*	31.1	24.9
Urban U.S.A.	9.6	11.7	19.5	30.4*	18.8	10.6
Rural U.S.A.	3.1	0.6	4.9	0.0	6.3	2.9
Foreign Country	0.7	0.6	0.0	2.5	0.0	0.8
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Number	2,251	163	41	79	16	2,550

* Indicates percentage is statistically significantly different from other percentages, at the 0.05 level of significance.

61.5 percent were also willing to work in county hospitals, and 62.9 percent were also willing to work in community hospitals. Similarly, Table 9 shows that while 76.5 percent of borrowers who wanted to work for low-income patients without health insurance most wanted to serve these patients, 50 percent were also willing to serve the elderly, and 57.4 percent were also willing to serve Medicare or Medicaid recipients.

Rspondents were more selective about the areas in Pennsylvania where they were willing to work. Over 24 percent said they would be willing to work only in urban areas of the Commonwealth and 10.3 percent said they would work only in rural areas. But 15.4 percent were willing to work in any area with shortages of health care professionals, 14 percent had no preference, and 31 percent would be willing to work in more than one area.

Borrowers' preferred areas of employment were significantly affected by their racial/ethnic group membership. Table 10 shows that Black and Asian respondents were significantly less likely to be willing to work in rural areas. Blacks were significantly more likely to prefer urban areas of Pennsylvania. Asian respondents, on the other hand, were more likely to prefer urban areas of another state.

The minimum amounts of loan forgiveness borrowers would need to participate in a program were related to their anticipated total student loan debt. The more borrowers expected to owe, the larger minimum amounts of loan forgiveness they said they would need to participate. However, borrowers with smaller anticipated loan indebtedness wanted larger proportions of their loans forgiven. Table 11 shows that, for one year of service in a forgiveness program, borrowers who expected to owe under $5,000 wanted, on average, at least $3,565 of their loans forgiven; this represents 79.2 percent of their total loan amounts. Borrowers who expected to owe $35,000 or more said they would need, on average, at least $9,465 of loans forgiven for one year of service; but this represents 23.7 percent of their loans.

Table 12 shows that the relationship between minimum amounts of loan forgiveness and anticipated total student loan indebtedness generally holds for borrowers willing to serve for more than one year in a forgiveness program. The table shows that some borrowers, 200 or about 7.1 percent, wanted a higher amount of loans forgiven than their expected debt. Possibly these borrowers over-estimated the minimum amount needed and/or under-estimated their expected total debt.

Relationships similar to the ones shown in Tables 11 and 12 also exist among borrowers' expected salaries, average total expected debt, and average minimum amount of loan forgiveness required to participate in a loan forgiveness program. That is, borrowers with lower anticipated debts expected lower average initial salaries and, thus, wanted a larger proportion of their student loans to be forgiven in order to participate in a program. Table 13 shows that borrowers with expected average starting salaries of under $15,000 had the lowest average expected indebtedness ($9,675), but required the highest proportion of their loans forgiven for one year of service (46.1 percent). The amount of loan forgiveness required for these borrowers represented 37.2 percent of their average expected initial-year salaries.

Borrowers who expected initial salaries of $50,000 or more had the highest average expected total debt ($38,575) and said they wanted the highest

Table Eleven
Minimum Required Total Amounts of Loans Forgiven For One Year of Service, By Anticipated Total Loan Debt

Minimum	Total Loan Debt: Under $5,000	$5,000 to $7,499	$7,500 to $9,999	$10,000 to $14,999	$15,000 to $19,999
Under $2,500	27.9%	4.6%	3.3%	4.3%	0.7%
$2,500-$4,999	55.9	44.4	34.3	22.4	20.4
$5,000-$7,499	4.9*	40.8	37.6	37.1	34.1
$7,500 or More	3.2*	3.2*	17.2	29.0	37.3
Unknown	8.1	7.0	7.6	7.2	7.5
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Number	222	284	210	375	279
Approx Mean	$3,565	$4,975	$5,865	$6,625	$7,175
Mean/Loans	79.2%	79.6%	67.0%	53.0%	41.0%

Minimum	$20,000 to $24,999	$25,000 to $29,999	$30,000 to $34,999	$35,000 or More	All Loans
Under $2,500	2.4%	0.0%	0.0%	0.6%	3.9%
$2,500-$4,999	12.7	14.8	13.5	1.7	18.5
$5,000-$7,499	29.7	28.4	15.3	9.5	22.2
$7,500 or More	46.1	46.9	64.4	84.0	49.1
Unknown	9.1	9.9	6.8	4.2	6.3
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Number	165	81	59	1,161	2,836
Approx Mean	$7,685	$7,790	$8,475	$9,465	$7,545
Mean/Loans	34.2%	28.3%	26.1%	23.7%	31.2%

* Amounts required greater than expected amounts borrowed.

Table Twelve
Minimum Required Total Amounts of Loans Forgiven For
More Than One Year of Service, By Anticipated Total Loan Debt

Minimum	Under $5,000	$5,000 to $7,499	$7,500 to $9,999	$10,000 to $14,999	$15,000 to $19,999
Under $5,000	50.5%	12.8%	4.4%	2.2%	0.7%
$5,000-$9,999	19.7*	59.1	66.0	25.5	16.9
$10,000-$14,999	6.0*	7.8*	12.6*	52.4	34.1
$15,000-$19,999	0.0	2.1*	3.4*	8.1*	35.1
$20,000 or more	4.5*	2.5*	3.9*	3.2*	5.7*
Unknown	19.3	15.7	9.7	8.6	7.5
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Number	218	281	206	372	279
Approx Mean	$6,675	$8,200	$9,160	$11,785	$14,195
Mean/Loans	166.9%	131.2%	104.7%	94.3%	81.1%

Minimum	$20,000 to $24,999	$25,000 to $29,999	$30,000 to $34,999	$35,000 or More	All Loans
Under $5,000	0.0%	0.0%	1.8%	0.2%	6.0%
$5,000-$9,999	10.3	7.4	5.3	0.8	18.6
$10,000-$14,999	24.7	24.7	19.3	5.2	17.2
$15,000-$19,999	33.1	22.2	26.3	13.7	13.8
$20,000 or More	22.9	33.3	36.8	74.9	35.6
Unknown	9.0	12.4	10.5	5.2	8.8
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Number	166	81	57	1,152	2,812
Approx Mean	$16,905	$18,100	$18,655	$23,565	$16,565
Mean/Loans	75.1%	65.8%	57.4%	57.6%	68.5%

* Amounts required greater than expected amounts borrowed.

Table Thirteen
Average Minimum Required Total Amounts of Loans To Be Forgiven
For One Year of Service As a Percent of Average Expected Debt,
By Expected Initial Salaries

Expected Salaries	Average Total Expected Debt	Average Required Amount Forgiven	Pct of Total Debt	Pct of Salary	Number
Under $15,000	$9,675	$4,465	46.1%	37.2%	54
$15,000-$19,999	10,975	4,840	44.1	27.7	182
$20,000-$24,999	14,970	6,130	40.9	27.2	498
$25,000-$29,999	22,255	7,340	33.0	26.7	684
$30,000-$34,999	23,305	7,480	32.1	23.0	443
$35,000-$39,999	25,840	8,035	31.1	21.4	190
$40,000-$44,999	30,020	8,450	28.1	19.9	145
$45,000-$49,999	32,160	8,735	27.2	18.4	95
$50,000 or More	38,575	9,675	25.1	16.1	472
Unknown	30,585	8,745	28.5	N.A.	73
All Respondents	$24,180	$7,545	31.2%	23.0%	2,836
Under $30,000	$17,770	$6,485	36.5%	27.4%	1,418
Above $30,000	$30,370	$8,520	28.1%	19.7%	1,345

minimum dollar amount for one year of service in loan forgiveness ($9,675). This amount represented 25.1 percent of their expected average total debt and 16.1 percent of their expected average starting salaries. On average, borrowers with average starting salaries under $30,000 wanted, at a minimum, at least 35.6 percent of their loans forgiven (representing 27.4 percent of their salaries) for one year of service, while borrowers with salaries above $30,000 said they wanted at least 28.1 percent of their loans forgiven (19.7 percent of their salaries).

Table 14 shows the relationship between loan forgiveness amounts by borrowers' expected medical fields and expected average initial salaries. Borrowers in relatively lower-paying fields--such as medical laboratory technicians ($23,323), nutritionists ($24,342) and health care administrators ($24,797)--would, on average, want at least 39.5 percent of their loans forgiven for one year of service. Those in higher-paying fields--podiatrics ($45,551), optometrists/ophthalmologists ($45,469) and general practitioners ($43,676)--wanted at least 22.8 percent of their loans forgiven for one year of service. Table B-6 shows similar relationships for borrowers willing to participate in a forgiveness program for more than one year.

Summary and Conclusions

An overwhelming majority of survey respondents appeared to be willing to participate in a loan forgiveness program for at least one year. Respondents appeared to be willing to serve a variety of patients or clients, and to work in a variety of medical facilities. Borrowers who most wanted to work in state and county hospitals and public health agencies were relatively more likely to be willing to serve in loan forgiveness, while those who most wanted to work in private hospitals and private practice were less willing to serve.

However, the number of respondents willing to serve in loan forgiveness represented only 28.8 percent of the sample. Furthermore, over 60 percent of the sampled borrowers did not return their surveys. Since so many surveys were not returned, it is possible that a large majority of the sample, and therefore the population, was actually not interested in participating in loan forgiveness. This could mean that a loan forgiveness program might not attract an adequate number of students to serve medically underserved Pennsylvanians.

Furthermore, given that the average borrower would require, at a minimum, about 31 percent of his or her loans forgiven (approximately $7,500) for one year's service in a program, and given the Commonwealth's current budget constraints, it appears that implementing a loan forgiveness program that is attractive to enough students to have an effect on health care may be prohibitively costly.

Costs would be high because of the amount of student indebtedness, the amounts of forgiveness students would want to participate, and the relationship between expected total debt and expected initial salaries. As the data show, the average total anticipated debt for students in the health care fields is approximately $24,180. A plurality of these students have both Stafford Loans and other types of loans. Therefore, they would need large incentives--that is, large amounts of their loans repaid--to encourage their participation. Data from the survey show that forgiving loans of respondents

Table Fourteen
Average Minimum Required Amounts to Be
Forgiven For One Year of Service, As a Percent of Average
Expected Debt and Average Expected Salary,
By Types of Medical Fields

Medical Field	Average Total Expected Debt	Average Expected Salary	Average Amount Req Forgiven For One Year Service	Pct of Total Debt	Pct of Salary	Number
Nursing	$11,783	$27,817	$6,055	51.4%	21.8%	628
Dental	33,591	37,707	8,526	25.4	22.6	203
Physical Therapy	19,313	30,563	6,641	34.4	21.7	134
Physician Assistant	11,844	27,031	5,938	50.1	22.0	32
M.D./General Practice	39,195	43,676	9,414	24.0	21.6	306
Obstetrics/Gynocology	29,077	39,795	8,192	28.2	20.6	78
Pediatrics	29,010	35,908	7,966	27.5	22.2	120
Optometry/Ophthalmology	38,411	45,469	8,750	22.8	19.2	48
Psychology	24,448	34,052	7,568	31.0	22.2	58
Medical Lab Technician	9,620	23,323	5,439	56.5	23.3	48
Podiatrics	39,949	45,551	9,493	23.8	20.8	147
Chiropractic	39,487	42,500	9,464	24.0	22.3	39
Radiology	12,921	27,357	6,382	49.4	23.3	35
Emergency Medicine	23,460	38,242	7,608	32.4	19.9	31
Surgery	33,691	35,066	8,979	26.7	25.6	38
Health Care Admin.	15,750	24,797	6,227	39.5	25.1	37
Occupational Therapy	15,432	25,877	6,606	42.8	25.5	77
Nutrition	13,204	24,342	6,439	48.8	26.5	38
Pharmacy	20,472	42,904	7,219	35.3	16.8	99
Audiology	19,500	28,071	6,742	34.6	24.0	35
M.D./Others	36,430	47,028	9,427	25.9	20.0	71
Non-M.D./Others	11,738	24,238	5,688	48.5	23.5	124
M.D./Unknown	39,267	40,517	9,741	24.8	24.0	121
Non-M.D./Unknown	15,798	26,317	6,371	40.3	24.2	104
All Respondents	$24,120	$34,353	$7,539	31.3%	21.9%	2,651

who were willing to serve for one year would cost approximately $16.3 million (an average of $7,500 of loan forgiveness wanted for one year of service times 2,167 respondents willing to participate). If 28.8 percent of the population of health care borrowers (6,845 students) served for one year, the cost would be approximately $51.3 million.

Some students reported relatively lower average debts. However, these students also had lower expected salaries; thus, they wanted greater proportions of their loans forgiven to participate. It appears, therefore, that it would be costly to target a forgiveness program towards students in these lower-paying fields, as some policymakers have suggested.

KR1.48910916/01

APPENDIX A

PENNSYLVANIA HIGHER EDUCATION ASSISTANCE AGENCY

660 BOAS STREET
HARRISBURG, PENNSYLVANIA 17102-1398

May 24, 1991

Dear Student:

The Pennsylvania General Assembly currently is considering bills to allow college graduates majoring in health care fields to have all or a portion of their Stafford Student Loans to be repaid by the Commonwealth if they agree to provide health care to underserved Pennsylvanians. These proposals, known as "loan forgiveness" programs, would provide incentives for future medical professionals to serve in geographic areas or fields that have had shortages of health care providers. To evaluate the potential effects of these proposals, we need to know more about you, your career goals and your willingness to participate in loan forgiveness programs.

You can help us by completing and returning the enclosed brief survey in the self-addressed, postage-paid envelope as soon as possible but no later than June 10, 1991. The survey asks some questions about you, your career plans and your willingness to provide health care services in medically underserved areas in Pennsylvania. It should take no more than ten minutes of your valuable time to complete and return the survey.

The survey has a label with your name on it. This will be used only by our research staff to permit them to match your survey responses to other data on file, thereby reducing the number of questions we need to ask. All your responses will be kept in strictest confidence and will be revealed to no one else. However, if you believe some questions are too personal or otherwise objectionable, please omit your answers to them.

I thank you in advance for completing and returning the survey. If you have any questions on the survey or our research, please feel free to write or telephone Dr. Jerry S. Davis, Director of Research and Policy Analysis, at (717) 257-2794.

I wish you the very best in all your future academic and professional endeavors.

Cordially,

Kenneth R. Reeher
President and
Chief Executive Officer

KRR:md
Enclosures

KR1.48910514/01

SURVEY OF PHEAA STAFFORD LOAN HEALTH PROFESSIONS BORROWERS

Instructions are given for each question on this survey. Please omit answers to any questions you feel are too personal or objectionable.

1. Would you be willing to provide health care services to medically underserved Pennsylvanians in exchange for having the Commonwealth repay your Stafford Loans? (Circle one Answer Code number.)

   1 - YES 2 - NO 3 - NOT SURE/UNKNOWN

2. What types of incentives would the Commonwealth have to provide to encourage you to provide health care services to medically underserved Pennsylvanians? (Circle one Answer Code number.)

   1 - REPAY JUST MY STAFFORD LOAN
   2 - REPAY OTHER TYPES OF STUDENT LOANS (SLS LOANS, HEAL LOANS, HEALTH PROFESSIONS LOANS, PERKINS LOANS)
   3 - PROVIDE GRANTS FOR FUTURE HEALTH CARE EDUCATION OR TRAINING
   4 - OTHER (Please Specify _____)
   5 - UNABLE OR UNWILLING TO PROVIDE SERVICE, REGARDLESS OF INCENTIVES (SKIP TO QUESTION 10 ON PAGE 2)

We want to know which types of health care services you might be willing to provide under a loan forgiveness program.

3. If you were offered loan forgiveness (or other incentives circled for Question 2), in what types of medical facilities would you be willing to work? (Circle all Answer Codes that apply to you.)

   1 - STATE-OPERATED HOSPITALS OR CLINICS
   2 - COUNTY-OPERATED HOSPITALS OR CLINICS
   3 - COMMUNITY HOSPITALS
   4 - PUBLIC HEALTH AGENCIES
   5 - NURSING HOMES
   6 - PRIVATE HOSPITALS
   7 - PRIVATE PRACTICE
   8 - HOME HEALTH/HOME HEALTH AGENCIES
   9 - OTHER (Specify _____)
   10 - NO PREFERENCE/UNKNOWN

4. What categories of patients or clients would you be willing to serve? (Circle each applicable number.)

   1 - LOW-INCOME WITH NO HEALTH INSURANCE
   2 - ELDERLY
   3 - MEDICARE OR MEDICAID RECIPIENTS
   4 - OTHER (Specify _____)
   5 - NO PREFERENCE/UNKNOWN

5. What kind of medical service would you be most willing to provide? (Circle one Answer Code number.)

   1 - NURSING
   2 - DENTAL
   3 - PHYSICAL THERAPY
   4 - PHYSICIANS ASSISTANT
   5 - PHYSICIAN (GENERAL PRACTICE)
   6 - OBSTETRICS/GYNECOLOGY
   7 - PEDIATRICS OR ADOLESCENT CARE
   8 - OPTOMETRY
   9 - PSYCHOLOGY OR PSYCHIATRY
   10 - OTHER (Specify _____)
   11 - NO PREFERENCE/UNKNOWN

6. In what areas of Pennsylvania would you be willing to work? (Circle each applicable Code number.)

1 - URBAN OR SUBURBAN AREAS
2 - RURAL AREAS
3 - ANY AREAS WITH SHORTAGES OF HEALTH CARE PROFESSIONALS
4 - OTHER (Specify _____)
5 - NO PREFERENCE/UNKNOWN

We would like to know how much of your educational loans would have to be repaid by the Commonwealth to encourage you to provide medical care to medically underserved Pennsylvania residents.

7. What is the minimum total amount of your educational loans that would have to be repaid by the Commonwealth in order to encourage you to provide health care services for one year to medically underserved Pennsylvanians?

1 - LESS THAN $2,500
2 - $2,500 - $4,999
3 - $5,000 - $7,499
4 - $7,500 OR MORE
5 - NO PREFERENCE/UNKNOWN

8. What is the minimum total amount of your loans that would have to be repaid by the Commonwealth to encourage you to provide health care services for more than one year? (Circle one Answer Code number.)

1 - LESS THAN $5,000
2 - $5,000 TO $9,999
3 - $10,000 TO $14,999
4 - $15,000 TO $19,999
5 - $20,000 OR MORE
6 - NO PREFERENCE/UNKNOWN

9. How many years of health care services to underserved Pennsylvanians would you be willing to provide in exchange for forgiveness of student loan repayments? (Circle one Answer Code number.)

1 - LESS THAN 1 YEAR
2 - 1 TO 2 YEARS
3 - 3 YEARS
4 - 5 YEARS OR MORE
5 - NO PREFERENCE/UNKNOWN

We want to know about your current and possible future loan debts.

10. What types of student loans do you now have or plan to have in the future? (Circle All Answer Codes that apply.)

1 - STAFFORD LOANS
2 - SLS LOANS
3 - HEAL LOANS
4 - HEALTH PROFESSIONS LOANS
5 - PERKINS LOANS
6 - STATE-SUBSIDIZED LOANS
7 - OTHER (Specify _____)

11. What is your present total indebtedness from all educational loans? (Circle one Answer Code number.)

1 - LESS THAN $5,000
2 - $5,000 - $7,499
3 - $7,500 - $9,999
4 - $10,000 - $14,999
5 - $15,000 - $19,999
6 - $20,000 - $24,999
7 - $25,000 - $29,999
8 - $30,000 - $34,999
9 - $35,000 OR MORE

12. What do you estimate your total indebtedness from all educational loans will be by the end of your degree program? (Circle one Answer Code number.)

1 - LESS THAN $5,000
2 - $5,000 - $7,499
3 - $7,500 - $9,999
4 - $10,000 - $14,999
5 - $15,000 - $19,999
6 - $20,000 - $24,999
7 - $25,000 - $29,999
8 - $30,000 - $34,999
9 - $35,000 OR MORE

Finally, we would like to ask a few questions about you and your career goals for statistical purposes.

13. What is your gender? (Circle one Answer Code number.)

1 - MALE 2 - FEMALE

14. What is your racial/ethnic identity? (Circle one Answer Code number.)

1 - BLACK, NON-HISPANIC
2 - WHITE, NON-HISPANIC
3 - HISPANIC
4 - AMERICAN INDIAN OR ALASKA NATIVE
5 - ASIAN OR PACIFIC ISLANDER
6 - OTHER (Specify _____)

15. What is your present marital status? (Circle one Answer Code number.)

1 - NEVER MARRIED
2 - MARRIED
3 - DIVORCED, SEPARATED OR WIDOWED

16. What is your year of enrollment in your postsecondary institution? (Circle the number.)

1 - FRESHMAN/FIRST-YEAR UNDERGRADUATE
2 - SOPHOMORE/SECOND-YEAR UNDERGRADUATE
3 - JUNIOR/THIRD-YEAR UNDERGRADUATE
4 - SENIOR/FOURTH-YEAR UNDERGRADUATE
5 - FIFTH-YEAR UNDERGRADUATE
6 - FIRST-YEAR GRADUATE/PROFESSIONAL
7 - OTHER GRADUATE/PROFESSIONAL YEAR (Specify _____)

17. What is your present enrollment status? (Circle one Answer Code number.)

1 - FULL-TIME
2 - PART-TIME
3 - OTHER (Specify _____)

18. What is your major field of study? (Write answer in the space provided.)

_____

19. What field of health care do you plan to enter after completing your postsecondary education? (Circle one Answer Code number.)

1 - NURSING
2 - DENTAL
3 - PHYSICAL THERAPY
4 - PHYSICIANS ASSISTANT
5 - PHYSICIAN (GENERAL PRACTICE)
6 - OBSTETRICS/GYNECOLOGY
7 - PEDIATRICS OR ADOLESCENT CARE
8 - OPTOMETRY
9 - PSYCHOLOGY OR PSYCHIATRY
10 - OTHER (Specify _____)
11 - UNKNOWN

20. When do you expect to finish your postsecondary education?

(Write month and year here _____.)

21. In what types of hospitals or health care facilities would you be willing to work? (Circle all Answer Code numbers that apply.)

1 - STATE-OPERATED HOSPITALS OR CLINICS
2 - COUNTY-OPERATED HOSPITALS OR CLINICS
3 - COMMUNITY HOSPITALS
4 - PUBLIC HEALTH AGENCIES
5 - NURSING HOMES
6 - PRIVATE HOSPITALS
7 - PRIVATE PRACTICE
8 - HOME HEALTH/HOME HEALTH AGENCIES
9 - OTHER (Specify _____)
10 - NO PREFERENCE/UNKNOWN

22. Of the types of facilities listed in Question 21, in which would you most like to serve?

(Write the Answer Code number here _____.)

23. What categories of clients or patients would you be willing to serve? (Circle all Answer Codes numbers that apply.)

1 - LOW-INCOME WITH NO HEALTH INSURANCE
2 - ELDERLY
3 - MEDICARE OR MEDICAID RECIPIENTS
4 - OTHER PUBLICLY OR PRIVATELY INSURED
5 - OTHER (Specify _____)
6 - NO PREFERENCE/UNKNOWN

24. Of the patients/clients identified in Question 23, which one would you most like to serve?

(Write the Answer Code number here _____.)

25. Where would you most like to work? (Circle one Answer Code number.)

1 - URBAN OR SUBURBAN AREA IN PENNSYLVANIA
2 - RURAL AREA IN PENNSYLVANIA
3 - URBAN OR SUBURBAN AREA IN ANOTHER STATE (Specify _____)
4 - RURAL AREA IN ANOTHER STATE (Specify _____)
5 - AREA IN ANOTHER COUNTRY (Specify _____)

26. What approximate annual salary do you expect to receive in your first year of full-time employment in the health care field? (Circle one Answer Code number.)

1 - LESS THAN $15,000
2 - $15,000 TO $19,999
3 - $20,000 TO $24,999
4 - $25,000 TO $29,999
5 - $30,000 TO $34,999
6 - $35,000 TO $39,999
7 - $40,000 TO $44,999
8 - $45,000 TO $49,999
9 - $50,000 OR MORE

Thank you for completing this survey. You have helped us a great deal.

KR1.48910501/01

The initial population of borrowers included 23,769 health care students who received Stafford or HEAL Loans through PHEAA. The samples were drawn to produce response numbers that would lead to a statistically safe conclusion that one could be 95 percent confident that the proportions observed in the respondents' answers would be between plus or minus 5 percent of the proportions in the population. In other words, if 45 percent of respondents answered a particular item one way, one could be 95 percent confident that the "true" proportion in the population the respondents were intended to represent would be between 40 and 50 percent (45 percent plus or minus 5 percent).

It was assumed that about 40 percent of surveyed borrowers would respond to the survey. In fact, 38.8 percent did so. Appendix Table A-1 displays the numbers of borrowers in the population, survey sample, and respondent group by their types of institutions attended and academic grade levels at these institutions. Borrowers at two types of institutions, State Universities and nursing schools, were statistically significantly more likely than others to have responded to the survey; about 49.7 percent of borrowers from State Universities and 52.6 percent of borrowers from nursing schools responded. Statistically significantly fewer four-year private college borrowers, 37 percent, and proprietary school borrowers, 21.8 percent, responded. Response rates for borrowers from other institutional types were not statistically significantly different from those for all borrowers.

There were a few variations in response rates by borrowers' academic grade levels within institutional types. For example, among four-year private college borrowers, graduate students were less likely than undergraduates to have responded, 33.4 percent versus 45.7 percent. Junior/third-year undergraduates at state-related colleges were more likely than others at these colleges to have responded, 49.4 percent versus 37.2 percent. Juniors at out-of-state institutions were also more likely than others at these institutions to have responded, 56.9 percent versus 40.1 percent. But these differences in response rates within institutional types were unlikely to have presented any major bias in respondents' representation of their larger samples. That is, respondents from each institutional type fairly adequately represented samples from each type.

Did respondents adequately represent the population of health professions borrowers? Appendix Table A-2 displays the proportions of borrowers in the population and respondent groups by their types of institutions. When comparing respondents to the population, it was found that borrowers attending State Universities, nursing schools and proprietary schools were under-represented in the respondent group, with 14.8 percent of respondents, but 23.3 percent of the population, having attended these institutions. Borrowers from two-year public and private colleges represented 20.4 percent of respondents but only 14.2 percent of the population. Borrowers from four-year private colleges, state-related colleges, vocational-technical schools and out-of-state institutions were similarly represented in the population and respondent groups. In all, 62.5 percent of borrowers in the population were validly represented in the respondent group, 14.2 percent were under-represented, and 23.3 percent were over-represented.

Overall, it is reasonable to conclude from these comparisons that respondents are fairly representative of borrowers in the population.

However, since surveyed borrowers who were willing to participate in a loan forgiveness program were probably more likely to respond to the survey than those who were not interested, it is possible that sampled borrowers who attended under-represented institutions were unlikely to have been willing to participate in a loan forgiveness program.

Appendix Table A-1
Survey Population, Sample and Respondents,
By Type of Institution and Academic Grade Level

	Population		Sample		Respondents		
Four-Year Private	Number	Percent	Number	Percent	Number	Percent	Response Rate
Freshman/First Year	0	0.0%	0	0.0%	0	0.0%	0.0%
Sophomore/Second Year	1,436	18.6	296	10.9	143	14.2	48.3
Junior/Third Year	1,262	16.4	257	9.4	121	12.0	47.1
4th & 5th Yr Undergrads	1,272	16.5	236	8.7	97	9.6	41.1
First Year Grads	1,084	14.1	689	25.3	257	25.5	37.3*
2nd Yr & Beyond Grads	2,650	34.4	1,244	45.7	389	38.7	31.2*
Total	7,704	100.0%	2,722	100.0%	1,007	100.0%	37.0%**
State University							
Freshman/First Year	0	0.0%	0	0.0%	0	0.0%	0.0%
Sophomore/Second Year	667	36.3	144	37.3	63	34.6	43.8
Junior/Third Year	551	30.0	108	29.5	63	34.6	58.3
4th & 5th Yr Undergrads	476	25.9	90	24.6	43	23.6	47.8
First Year Grads	58	3.1	9	2.5	6	3.3	66.7
2nd Yr & Beyond Grads	87	4.7	15	4.1	7	3.9	46.7
Total	1,839	100.0%	366	100.0%	182	100.0%	49.7%**
State-Related							
Freshman/First Year	0	0.0%	0	0.0%	0	0.0%	0.0%
Sophomore/Second Year	869	18.1	182	11.3	65	10.5	35.7
Junior/Third Year	870	18.1	178	11.1	88	14.2	49.4*
4th & 5th Yr Undergrads	1,139	23.7	238	14.8	82	13.2	34.5
First Year Grads	758	15.8	366	22.8	155	25.0	42.3
2nd Yr & Beyond Grads	1,168	24.3	643	40.0	230	37.1	37.1
Total	4,804	100.0%	1,607	100.0%	620	100.0%	38.6%
Two-Year Public							
Freshman/First Year	1,663	60.2%	765	77.2%	327	76.6%	42.7%
Sophomore/Second Year	1,100	39.8	226	22.8	100	23.4	44.2
Total	2,763	100.0%	991	100.0%	427	100.0%	43.1%

Appendix Table A-1 (continued)

	Population		Sample		Respondents		
Two-Year Private	Number	Percent	Number	Percent	Number	Percent	Response Rate
Freshman/First Year	406	65.6%	406	90.6%	163	91.6%	40.1%
Sophomore/Second Year	211	34.1	42	9.4	15	8.4	35.7
Junior/Third Year	2	0.3	0	0.0	0	0.0	0.0
Total	619	100.0%	448	100.0%	178	100.0%	39.7%
Nursing School							
Freshman/First Year	0	0.0%	0	0.0%	0	0.0%	0.0%
Sophomore/Second Year	889	63.2	176	64.7	92	64.3	52.3
Junior/Third Year	484	34.4	92	33.8	47	32.9	51.1
4th & 5th Yr Undergrads	3	0.2	1	0.4	1	0.7	100.0
First Year Grads	17	1.2	2	0.7	2	1.4	100.0
2nd Yr & Beyond Grads	14	1.0	1	0.4	1	0.7	100.0
Total	1,407	100.0%	272	100.0%	143	100.0%	52.6%**
Vo-Tech Schools							
Freshman/First Year	0	0.0%	0	0.0%	0	0.0%	0.0%
Sophomore/Second Year	106	100.0	26	100.0	14	100.0	53.8
Total	106	100.0%	26	100.0%	14	100.0%	53.8%
Proprietary School							
Freshman/First Year	2,138	93.0%	505	94.2%	112	95.7%	22.2%
Sophomore/Second Year	152	6.6	28	5.2	5	4.3	17.9
Junior/Third Year	9	0.4	3	0.6	0	0.0	0.0
Total	2,299	100.0%	536	100.0%	117	100.0%	21.8%**

Appendix Table A-1 (continued)

Out-of-State	Population Number	Population Percent	Sample Number	Sample Percent	Respondents Number	Respondents Percent	Response Rate
Freshman/First Year	0	0.0%	0	0.0%	0	0.0%	0.0%
Sophomore/Second Year	375	16.8	69	10.3	30	10.8	43.5
Junior/Third Year	279	12.5	51	7.6	29	10.5	56.9*
4th & 5th Yr Undergrads	232	10.4	46	6.9	21	7.6	45.7
First Year Grads	628	28.3	184	27.5	82	29.6	44.6
2nd Yr & Beyond Grads	714	32.0	320	47.7	115	41.5	35.9
Total	2,228	100.0%	670	100.0%	277	100.0%	41.3%
All Institutions							
Freshman/First Year	4,207	17.7%	1,676	21.9%	602	20.3%	35.9%*
Sophomore/Second Year	5,805	24.4	1,189	15.6	527	17.7	44.3*
Junior/Third Year	3,457	14.5	689	9.0	348	11.7	50.5*
4th & 5th Yr Undergrads	3,122	13.1	611	8.0	244	8.2	39.9
First Year Grads	2,545	10.7	1,250	16.4	502	16.9	40.2
2nd Yr & Beyond Grads	4,633	19.6	2,223	29.1	742	25.1	33.4*
Total	23,769	100.0%	7,638	100.0%	2,965	100.0%	38.8%

* Indicates that class level response rate is statistically significantly different from other responses at this institution, at the 0.05 level of significance.

** Indicates that response rate for borrowers at this institution is statistically significantly different from response rates for borrowers at other institutions, at the 0.05 level of significance.

Appendix Table A-2
Survey Population and Respondents,
By Types of Institutions

	Population	Percent	Respondents	Percent	Survey Percent
Four-Year Private	7,704	32.4%	1,007	34.0%	13.1%
State University	1,839	7.7	182	6.1	9.9
State-Related	4,804	20.2	620	20.9	12.9
Two-Year Public	2,763	11.6	427	14.4	15.4
Two-Year Private	619	2.6	178	6.0	28.8
Nursing	1,407	5.9	143	4.8	10.2
Vocational-Technical	106	0.5	14	0.5	13.2
Proprietary	2,299	4.7	117	3.9	5.1
Out-of-State	2,228	4.4	277	9.4	12.4
All Schools	23,769	100.0%	2,965	100.0%	12.5%

Appendix Table A-3
Respondents' Demographic Characteristics

Gender	Number	Percent
Male	1,015	34.3%
Female	1,945	65.7
Racial/Ethnic Background		
Black	189	6.5
White	2,576	88.1
Hispanic	46	1.6
Asian	94	3.2
Other	19	0.6
Marital Status		
Never Married	2,059	69.8
Married	659	22.3
Divorced, Separated, Widowed	232	7.9
Attendance Status		
Full-Time	2,316	79.8
Part-Time	235	8.1
Other	353	12.2

Appendix Table A-4
Respondents' Intended Field of Health Care, By
Gender and Racial-Ethnic Group

	Gender			Racial-Ethnic Group					
	Male	Female	Number	White	Black	Hispanic	Asian	Other	Number
Nursing	9.7%	90.3%	723	92.3%	6.8%	0.4%	0.1%	0.4%	716
Dental Care	52.4	47.6	212	81.9	5.2	6.7	6.2	0.0	210
Physical Therapy	29.2	70.8	120	90.7	8.5	0.0	0.8	0.0	118
Gen'l Practice	60.9	39.1	261	85.5	5.9	1.6	5.5	1.5	255
OB/GYN	22.9	77.1	83	80.5	14.6	1.2	1.2	2.5	82
Pediatrics	24.0	76.0	125	82.3	10.5	1.6	5.6	0.0	124
Eye Care	55.6	44.4	54	81.5	1.9	3.7	12.9	0.0	54
Psychology	23.3	76.7	60	91.7	3.3	1.7	3.3	0.0	60
M.D. Other	61.5	38.5	52	91.8	2.0	2.0	4.2	0.0	49
Medical Assistant	0.0	100.0	16	75.0	25.0	0.0	0.0	0.0	16
Lab Technician	18.5	81.5	54	90.7	5.5	1.9	1.9	0.0	54
Chiropractic	64.1	35.9	39	92.3	7.7	0.0	0.0	0.0	39
Radiology	22.0	78.0	41	97.6	2.4	0.0	0.0	0.0	41
Emergency Med.	52.9	47.1	51	96.0	0.0	2.0	2.0	0.0	51
Surgery	67.2	32.8	64	90.3	0.0	1.6	8.1	0.0	62
Administration	15.4	84.6	39	97.4	2.6	0.0	0.0	0.0	38
Occup. Therapy	13.3	86.7	75	95.9	2.7	1.4	0.0	0.0	74
Nutrition	19.1	80.9	42	97.6	2.4	0.0	0.0	0.0	42
Pharmacy	39.3	60.7	112	86.4	4.5	0.0	9.1	0.0	110
Resp. Technician	40.7	59.3	27	85.2	11.1	0.0	0.0	3.7	27
Sports Medicine	63.6	36.4	44	90.8	4.6	2.3	0.0	2.3	44
Anesthesiology	41.7	58.3	24	70.8	12.6	0.0	8.3	8.3	24
Orthopedics	95.6	4.4	23	95.5	0.0	0.0	4.5	0.0	22
Speech Therapy	2.8	97.2	36	100.0	0.0	0.0	0.0	0.0	36
Internal Medicine	56.0	44.0	25	87.5	0.0	0.0	12.5	0.0	24
Cardiology	34.4	65.6	32	90.7	3.1	0.0	3.1	3.1	32
Geriatrics	10.5	89.5	19	73.7	21.1	0.0	0.0	5.2	19
Podiatrics	66.5	33.5	161	74.8	13.8	4.4	4.4	2.6	159
Physician Asst.	20.6	79.4	34	91.2	8.8	0.0	0.0	0.0	34
Non-M.D. Others	35.9	64.1	39	100.0	0.0	0.0	0.0	0.0	38
M.D.-Unknown	53.3	46.7	150	82.4	6.1	3.4	8.1	0.0	148
Non-MD-Unknown	17.8	82.2	90	86.5	7.9	1.1	3.4	1.1	89
All Fields	34.3%	65.7%	2,927	88.0%	6.5%	1.6%	3.2%	0.7%	2,891

Appendix Table A-5
Respondents' Expected Initial Salary

Salary	Number	Percent
Under $15,000	55	1.9%
$15,000-$19,999	194	6.8
$20,000-$24,999	516	18.0
$25,000-$29,999	708	24.6
$30,000-$34,999	464	16.1
$35,000-$39,999	199	6.9
$40,000-$44,999	152	5.3
$45,000-$49,999	96	3.3
$50,000 or More	490	17.0
	2,874	100.0%

Approximate Mean Salary: $34,130

Median Salary: $29,745

Appendix Table A-6
Frequency of Survey
Respondents' Types of Student Loans

Types of Loans	Number of Respondents	Percent
Stafford Only	916	31.3%
Stafford, Perkins	220	7.5
Stafford, SLS, HEAL	175	6.0
Stafford, HEAL	153	5.2
Stafford, SLS	152	5.2
Stafford, SLS, HEAL, Perkins	148	5.0
Stafford, HPSL	141	4.8
Stafford, HEAL, HPSL, Perkins	104	3.5
Stafford, SLS, HEAL, HPSL, Perkins	96	3.3
Stafford, HEAL, Perkins	87	3.0
Stafford, Other Loan	72	2.5
Stafford, HPSL, Perkins	59	2.0
Stafford, SLS, HEAL, HPSL	56	1.9
Stafford, State-Subsidized	45	1.5
Stafford, HEAL, HPSL	44	1.5
Stafford, SLS, Perkins	43	1.5
All Other Loan Types	420	14.3
Total	2,931	100.0%

APPENDIX B

Appendix Table B-1
Respondents' Willingness to Serve,
By Gender, Marital Status, Grade Level,
Enrollment Status and Type of Institution

	Willingness to Serve			
Gender	Willing to Serve	Unwilling to Serve	Not Sure	Number
Male	73.6%	3.2%	23.2%	1,003
Female	74.4	1.7	23.9	1,916
Marital Status				
Never Married	73.4%	2.2%	24.4%	2,031
Married	75.2	2.5	22.3	649
Divorced, Separated, Widowed	76.8	1.8	21.4	229
Academic Grade Level				
Freshman/First Year	78.5%	1.0%	20.5%	590
Sophomore/Second Year	78.8	1.7	19.5	514
Junior/Third year	75.0	0.6	24.4	344
4th & 5th Yr Undergrad	76.9	2.5	20.7	242
First Year Grad	70.6	2.7	26.7	333
2nd Year & Beyond Grad	68.7	3.3	28.0	571
Enrollment Status				
Full-Time	74.1%	2.0%	23.9%	2,286
Part-Time	75.9	1.7	22.4	228
Other	73.4	4.0	22.6	349
Type of Institution				
Four-Year Private	70.7%	3.0%	26.3%	1,353
State University	83.6	1.1	15.3	177
State-Related	70.4	2.1	27.5	862
Two-Year Public	78.0	1.4	20.6	418
Two-Year Private	75.1	1.1	23.7	177
Nursing School	79.3	0.0	20.7	140
Vo-Tech School	92.3	0.0	7.7	13
Proprietary School	82.5	0.9	16.7	114
Out-of-State	70.7	4.1	25.1	366
All Respondents	74.1	2.3	23.6	2,924

Appendix Table B-2
Willingness to Serve in Loan Forgiveness,
By Gender and Race/Ethnicity

	Gender		Race/Ethnicity				
	Male	Female	Black	White	Hispanic	Asian	Other
Willing to Serve	73.6%	74.4%	91.4%*	73.0%	82.6%	66.3%	66.7%
Not Willing	3.2	1.7	0.0	2.4	0.0	3.3	5.6
Not Sure	23.2	23.9	8.6	24.7	17.4	30.4	2.8
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Number	1,003	1,916	187	2,541	46	92	18

* Indicates percentage is statistically different from the others, at the 0.05 level of significance.

Appendix Table B-3
Borrowers' Willingness to Serve in Loan Forgiveness,
By Intended Medical Fields

Willingness to Serve	Medical Fields: Nursing	Dental Care	Physical Therapy	Physician's Assistant	General Practice
Willing to Serve	79.0%	76.4%	78.8%	64.7%	73.9%
Not Willing	0.1	1.0	0.0	2.9	1.9
Not Sure	20.9	22.6	21.1	32.4	24.2
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Number	637	212	142	34	318

	OB/GYN	Pediatrics	Optometry/ Ophthalmology	Psychology	Medical Lab Technician
Willing to Serve	72.5%	69.5%	67.3%	73.3%	81.6%
Not Willing	1.2	0.0	4.1	3.3	4.1
Not Sure	26.3	30.5	28.6	23.3	14.3
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Number	80	131	49	60	49

	Podiatrics	Occupational Therapy	Pharmacy	MD/ Others	Non/MD Others	All Respondents
Willing to Serve	70.8%	73.1%	69.2%	61.5%	82.5%	74.8%
Not Willing	0.6	1.3	2.9	2.5	0.2	1.1
Not Sure	28.6	25.6	27.9	36.9	17.3	24.1
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Number	154	78	104	283	417	2,748

Appendix Table B-4
Respondents Types of Loans,
By Intended Medical Fields

Types of Loans	Medical Fields: Nursing	Dental Care	Physical Therapy	Physicians Assistant	M.D. Gen Prac
Stafford Only	53.0%*	15.0%	44.6%*	37.1%	3.8%
Stafford and Other Loans	44.1	82.2*	50.4	54.3	95.6*
Other Only (No Stafford)	2.9	2.8	5.0	8.6	0.6
Total	100.0%	100.0%	100.0%	100.0%	100.0%
Number	642	213	139	35	317

	OB/GYN	Pediatrics	Optometry/ Ophthalmology	Psychology
Stafford Only	15.2%	27.7%	14.0%	29.3%
Stafford and Other Loans	82.3	69.2	84.0	69.0
Other Only (No Stafford)	2.5	3.1	2.0	1.7
Total	100.0%	100.0%	100.0%	100.0%
Number	79	130	50	58

	Medical Lab Technician	Podiatrics	Occupational Therapy	Pharmacy
Stafford Only	50.0%	1.3%	40.5%	20.2%
Stafford and Other Loans	48.0	96.8*	53.2	76.0
Other Only (No Stafford)	2.0	1.9	6.3	3.8
Total	100.0%	100.0%	100.0%	100.0%
Number	50	157	79	104

	MD/Other Fields and Unknown	Non-MD/Other Fields and Unknown	All Respondents
Stafford Only	4.5%	54.0%*	30.8%
Stafford and Other Loans	93.4*	43.2	66.4
Other Only (No Stafford)	2.1	2.8	2.8
Total	100.0%	100.0%	100.0%
Number	287	417	2,758

* Indicates percentage is statistically different from the others, at the 0.05 level of significance.

Table B-5
Respondents' Types of Student Loans,
By Race/Ethnic Group Membership

Types of Loans	Black	White	Hispanic	Asian	Others	Total
Stafford Loans	24.9%	33.3%	6.5%	10.9%	21.0%	31.5%
Stafford & Others	71.9	64.0	84.8	87.0	73.7	65.6
Other Loans Only	3.2	2.7	8.7	2.2	5.3	2.9
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Number	185	2,550	46	92	19	2,892

Appendix Table B-6
Average Minimum Required Total Amounts of Loans To Be Forgiven
For More Than One Year of Service As a Percent of
Average Expected Debt, By Expected Initial Salaries

Expected Salaries	Average Total Expected Debt	Average Required Amount Forgiven	Pct of Total Debt	Pct of Salary	Number
Under $15,000	$9,725	$8,835	90.8%	73.6%	53
$15,000-$19,999	10,305	8,765	85.1	50.1	181
$20,000-$24,999	15,000	12,025	80.2	53.4	497
$25,000-$29,999	22,170	15,780	71.1	57.4	677
$30,000-$34,999	23,455	16,380	69.8	50.4	436
$35,000-$39,999	26,035	18,150	69.7	48.4	188
$40,000-$44,999	30,090	18,870	62.7	44.4	146
$45,000-$49,999	32,010	20,480	64.0	43.1	96
$50,000 or More	38,775	23,340	60.2	38.9	467
Unknown	31,095	20,440	65.7	N.A.	71
All Respondents	$24,090	$16,475	68.4%	50.4%	2,812
Under $30,000	$17,645	$13,290	75.3%	55.7%	1,408
Above $30,000	$30,530	$19,635	64.3%	43.6%	1,333

Appendix Table B-7
Average Numbers of Years Respondents Were Willing
to Serve For Loan Forgiveness, By Intended Fields

	Mean	Number	Percent No Preference
Nursing	1.92*	646	13.3%
Dental Care	2.57	208	11.6
Physical Therapy	2.11	139	10.1
Physician Assistant	1.91*	35	8.6
General Practice	3.25**	314	14.3
OB/GYN	2.76	80	8.7
Pediatrics	2.69	130	13.1
Eye Care	2.98**	49	14.3
Psychology	2.60	59	1.7*
M.D. Other	2.60	60	13.3
Medical Assistant	1.35*	15	13.3
Lab Technician	2.05	49	18.4
Podiatrics	2.96**	153	19.6
Chiropractic	3.47**	39	20.5
Radiology	2.50	36	25.0**
Emergency Medicine	2.72	32	28.1**
Surgery	2.68	38	13.2
Administration	2.60	38	18.4
Occupational Therapy	2.02	78	14.1
Nutrition	2.06	40	15.0
Pharmacy	2.10	102	10.8
Respiratory Technician	2.02	28	3.6*
Sports Medicine	2.29	17	17.7
Orthopedics	3.17**	15	20.0
Speech Therapy	2.27	38	7.9
Cardiology	2.44	28	35.7**
Non-M.D. Other	2.19	37	21.6
M.D.--Unknown	2.77	129	23.3**
Non-M.D.--Unknown	2.33	108	20.4
All Fields	2.45	2,740	14.5%
Standard Deviation	0.46		

* Indicates value is one S. D. below average for all respondents.

** Indicates value is one S. D. above average for all respondents.

Appendix Table B-8
Respondents' Average Current and Expected Total
Loan Debt, By Major Fields and Current Year of Attendance

	M.D. Fields				Non-M.D. Fields			
Years	Current	N	Expected	N	Current	N	Expected	N
First Year	$5,550	5	$31,750	5	$5,785	589	$9,805	578
Second Year	7,905	18	35,810	20	7,475	498	13,495	498
Third Year	9,575	10	29,445	9	10,110	330	15,945	333
Fourth Year	9,750	4	40,000	4	13,915	234	17,260	234
Grad Year 1	28,035	280	39,135	281	17,065	51	24,520	53
Grad Year 2+	38,265	517	39,505	517	25,100	57	26,755	57